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Stick for Helping the Blind Person

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***Abstract:** As we all know that sense of vision to person is a crucial factor in our life, however there's some folks that have lack of quality as a result of sightlessness the target of this project is employed to assist the blind individuals and that they square measure able to simply move with the physical world by exploitation this sensible blind stick. concerning 285 million individuals square measure visually impaired worldwide: thirty-nine million square measure blind and 246 million have low vision. If you notice them, you'll be able to all right fathom it they can't walk while not the assistance of different. One needs to raise steering to achieve their destination. exploitation this blind stick, a person will walk a lot of with confidence. This follow inaudible sensing element detects the thing ahead of the person and provides response to the user by alarm from the buzzer, which is able to provides a high buzz because the object gets nearer to the blind man. So, the person will walk with none concern. The LDR sensing element square measure employed in the continue determine the day and night for the blind individuals. The microcontroller (Arduino Nano) to receive the sensing element signals and method them to short pulses to the Arduino pins wherever buzzers square measure connected. This device is going to be best resolution to beat their difficulties and facilitate*
***Keywords:** Smart Stick, Arduino Uno, Location Tracking, Sensors, Object Detection*

I. INTRODUCTION

Technology will facilitate disabled persons to measure a standard life. Humans don't seem to be disabled. someone will ne'er be broken. Our designed setting, our technologies, is broken and thru technological Innovation. With this in mind here we tend to use the ability of Arduino and straightforward sensors to make a "Blind man's stick" that would perform over simply a stick for visually impaired persons.

II. LITERATURE SURVEY

A. S. Ganwar(2011).

Designed a sensible stick for blind which might provide early warning of associate degree obstacle victimization Infrared (IR) sensors [8]. After distinguishing the obstacles, the stick alerts the visually impaired folks victimization vibration signals. but the sensible stick targeted just for obstacle detection however it's not aiding for emergency functions.

B. S. Chew (2012)

Proposed the good white cane, referred to as Blindspot that mixes GPS technology, social networking and inaudible sensors to assist visually impaired folks to navigate public areas. The GPS detects the situation of the obstacle and alerts the blind to avoid them hit the obstacle victimization ultra-sonic sensors. however, GPS failed to show the potency in tracing the situation of the obstacles since ultra-sonic tells the space of the obstacle [9]

C. Benjamin etal (2011)

Had developed a sensible stick exploitation optical maser sensor to discover the obstacles and down curbs [10]. Obstacle detection was signalized by a pitch "BEEP" employing a mike. the planning of the optical maser cane is incredibly straightforward and intuitive. The stick will solely detect obstacle, however cannot give psychological feature and psychological support. There exists solely beep sound that triggers any obstacle and there's no any help to direct them.

D. Central Michigan University (2009)

Developed an electronic cane for blind people that would provide contextual information on the environment around the user. They used RFID chips which are implanted into street signs, store fronts, similar locations,
and the cane reads those and feeds the information back to the user [11]. The device also features an ultrasound sensor to help to detect objects ahead of the cane tip. The Smart Cane, which has an ultrasonic sensor mounted on it, is paired with a messenger bag that is worn across the shoulder. A speaker located on the bag strap voice alerts when an obstacle is detected and also directs the user to move in different direction.

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E. Mohd Helmyabd Wahab and Amirul A. Talibetal (2011)

Developed a cane may communicate with users through voice alert and vibration signal) [12]. Unbearable sensors square measure wont to discover obstacle before, since unhearable sensors square measure sensible in police investigation obstacle in few meters vary and this info are going to be sent within the type of voice signal. This voice signal is sent via speaker to the user. Here blind folks would possibly realize it troublesome in move with none emergency alert instead of having solely unhearable sensors.

F. Alejandro R. Garcia Ramirez and Renato Fonseca Livramento da Silvaetal (2012)

Designed a helpful technology device referred to as the electronic long cane to function a quality aid for blind and visually impaired individuals [13]. The author implements the cane with an engineering science style. And an embedded electronic system, which inserts within the handle of a standard long cane. The system was designed exploitation perception sensors to find obstacles higher than the region. It works in such the way once an obstacle is detected; the cane vibrates or makes a sound. However, this technique solely detects obstacles higher than the region.

G. Joao José, Miguel Farrajota, Joao M.F. Rodrigues (2011)

Designed a wise stick image. it had been tiny in size, cheap, and simply wearable navigation aid. This blind stick functions by addressing the worldwide navigation for guiding the user to some destiny and native navigation for negotiating ways, sidewalks, and corridors, even with shunning of static also as moving obstacles. instead of that, they made-up the stereo camera worn at chest height, the personal computer during a shoulder-strapped pouch or pocket, and only 1 headphone or tiny speaker. The system is obscure, and with no hindrance whereas walking with the cane.

Also, it doesn't block traditional sounds within the surroundings. Shruti Dambhare and A.Sakhare (2011) designed a synthetic vision and object detection with time period help via GPS to provide a affordable and economical navigation aid for the blind which provides a way of artificial vision by providing data concerning the environmental situation of static and dynamic objects around them.

III. PROCEDURE FOLLOWED IN THE PROPOSED SYSTEM.

A. Recognizer Module

This module is basically responsible for recognizing the obstacles coming in the way of the person and make a vibration in the physical stick to notify the user that he is about to face an object.

B. GPS and GSM Module

In this module through GPS and GSM the meridian and latitude of the stick is half-tracked that is shipped to the emergency contact in emergency things. The latitude and meridian of the stick is shipped as a text message.

GPS device can retrieve from the GPS system location and time data altogether climate, anywhere on or close to the earth. A GPS reception desires Associate in Nursing patent line of sight to four or further GPS satellites, [2] and is subject to poor satellite signal conditions.

In exceptionally poor signal conditions, as Associate in Nursing example in urban areas, satellite signals may exhibit multipath propagation where signals skip off structures, or unit weakened by status. Clogged lines of sight may arise from a tree cowl or at intervals a structure, like in Associate in Nursing extremely building, garage or tunnel. Today, most standalone GPS receivers unit used in cars.

The GPS capability of smartphones may use assisted GPS (A-GPS) technology, significantly once GPS signals unit poor or unprocurable. However, the mobile network a vicinity of the A-GPS technology wouldn't be accessible once the smartphone is outside vary of the mobile reception network.

IV. METHODOLOGY

A. Arduino UNO

This is associate open supply tool that is well accessible. The advantage of mistreatment it's simple to implement as a result of it uses object orientating programming paradigm for the implementation of the code. It contains fourteen digits pins and six analogue pins that is employed for input and output knowledge. Our project uses the analogue pins for input IR proximity detector and therefore the digital pins for output.

B. Ultrasonic Sensors

Ultrasonic sensing element additionally known as as AN inaudible electrical device. we tend to area unit mistreatment breathed sensors that area unit terribly dependable for the outstanding skills. breathed sensors compute the most important sophisticated tasks involving object detection or level activity with millimetres accuracy, as a result of their activity technique works reliably beneath most conditions.

Ultrasonic sensors measure correct distance mistreatment non-contact technology-A technology that involves no physical contact between sensors and object.

Transmitter and receiver area unit 2 main elements of the sensing element wherever former
converts AN electrical signal to inaudible waves whereas later converts that
ultrasonic signals back to electrical signals. These inaudible waves area unit nothing however sound signals that may be measured and displayed at the receiving finish.

Ultrasonic sensors have tried their dependableness and endurance in nearly all industrial sectors. These sectors include:

1) Mechanical engineering/machine tool
2) Food and drink
3) Woodworking and furnishings
4) Building materials
5) Agriculture
6) Construction
7) Pulp and paper
8) Material handling
9) Level activit

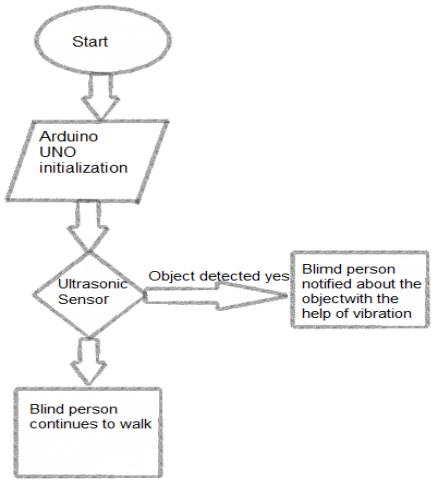


Fig1 : Flowchart for object detection

V. RESULT

If no obstacles found, person can move.
If obstacles or dip in path detected buzzer and speaker will sound loud.

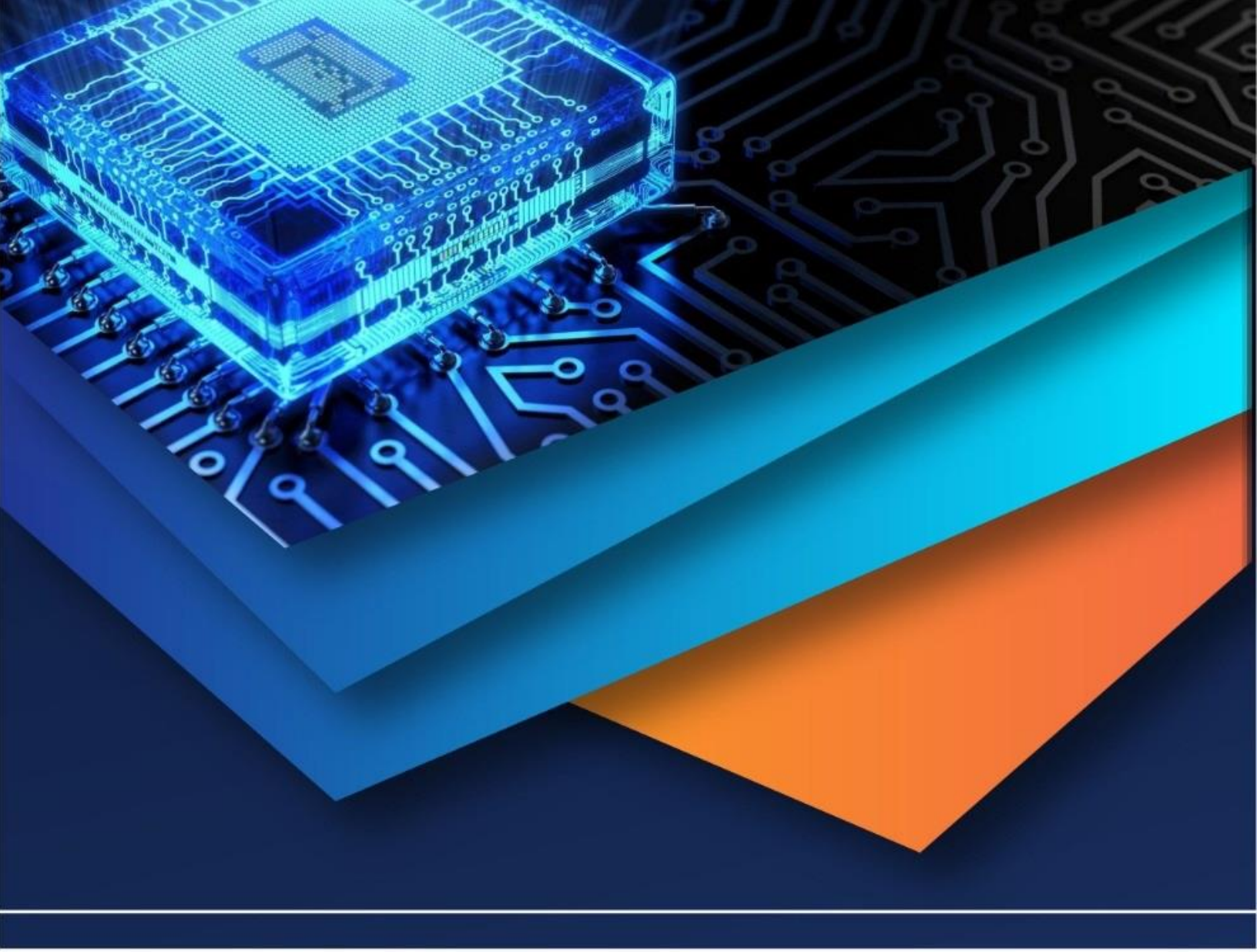
VI. CONCLUSION

In this project we have a tendency to emphasize in creating of a STICK FOR serving to THE blind man and that we have a tendency to expect can facilitate the unseeing person to sense the objects on its approach and can additionally facilitate him to know whether or not its day or night. This stick can guide the some to a secure path. On alternative the opposite} facet we have a tendency to are still implementing some modifications relating to our project during which a blind man are going to be target-hunting to the trail he needs to travel and can offer info the knowledge the data} if he needs to go left or right with a Bluetooth phone programmed to produce information and directions and lots of other sensors to form it additional useful

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